Agilent Network Analyzer

J6802A Distributed Network Analyzer MX

Hardware Setup Guide

Agilent Technologies

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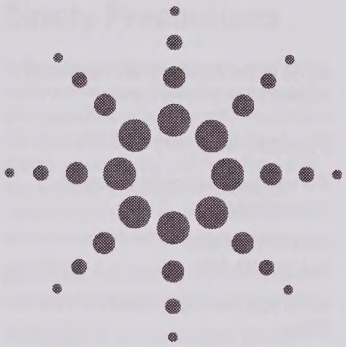

Agilent J6802A Distributed Network Analyzer MX

Hardware Setup Guide

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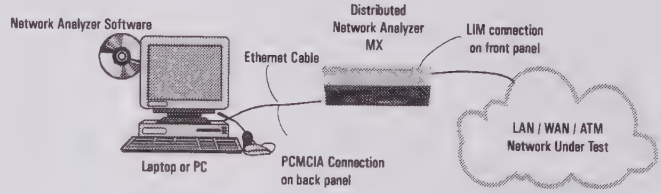
Documentation Map

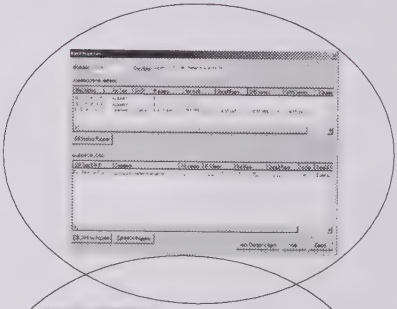
The books and Help shown here are available to assist you in setting up and using the Distributed Network Analyzer MX.

Install and Connect

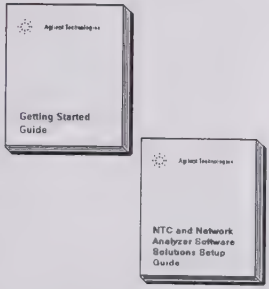

Network Analyzer Software
Distributed Network Analyzer MX
LIM connection on front panel
Ethernet Cable
LAN / WAN / ATM Network Under Test
Laptop or PC
PCMCIA Connection on back panel

NTC launches the Network Analyzer Software on the Distributed Network Analyzer MX (DNA MX) for LAN and WAN network testing through a remote session interface. Data capture is done using the Line Interface Module installed in the DNA MX.

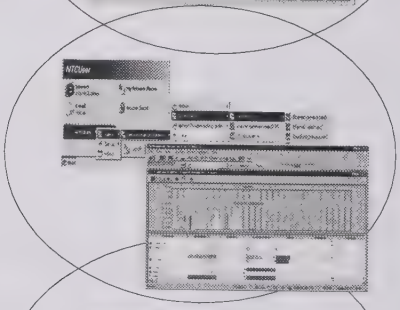
Configure



Select and configure telemetry port to set IP, network, and the ownership parameters, and set RMON Ethernet interface parameters.

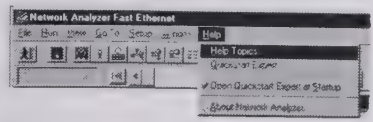


Run

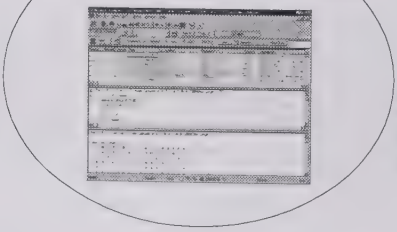


Start a Network Analyzer application through the NTC Console. Configure and run measurements.

Use the Help to get details.



Analyze Data



Analyze data after you reconnect to the Distributed Network Analyzer MX

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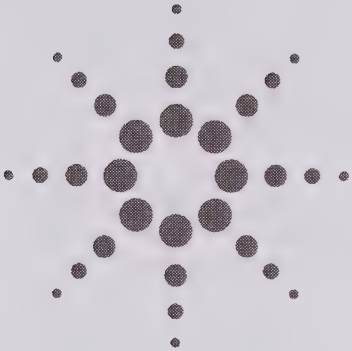

1
Overview of the Distributed Network Analyzer MX

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The Network Analyzer Solutions

The Agilent Network Analyzer product family contains new ultra-high-performance acquisition hardware platforms. This product family includes the following hardware items for testing in a variety of scenarios:

- Agilent J6800A Network Analyzer – Dual LIM acquisition system with integrated analysis software and built-in PC
- Agilent J6801A Distributed Network Analyzer – Single LIM acquisition system requiring external analysis software
- Agilent J6802A Distributed Network Analyzer MX – Single LIM acquisition system with integrated analysis software
- Agilent J6805A Distributed Network Analyzer MX – NDIS support with integrated analysis software

The J6800A, J6801A, and J6802A Network Analyzer products provide expert network testing and troubleshooting systems that support real-time measurements in LAN, WAN, and ATM network environments. The J6805A Distributed Network Analyzer ME provides Ethernet LAN measurement analysis only.

These products are capable of fulfilling all network test and analysis needs to support a variety of data applications that carry traffic, including voice and streaming media. For this reason, the Network Analyzer is the tool of choice for network engineers who want to resolve the complex problems that occur over any network layer using LAN, WAN, or ATM technology.

The Agilent Network Analyzer software that supports the Distributed Network Analyzer MX and other Network Analyzer hardware involves the interaction among several applications. The next section describes the Network Troubleshooting Center, Network Analyzer Software, and SNMP/RMON2 applications that contribute to the Network Analyzer Solutions. A network deployment diagram provides a pictorial representations about how these software components interact.

Network Troubleshooting Center (NTC)

NTC provides a centralized troubleshooting solution that enables the use of multiple Network Analyzers and SNMP/RMON2 agents from a single location. The NTC software consists of two components: the NTC Console and the NTC Server. You can install both components on the same PC. Alternatively, you can install the NTC Console on one or more machines, and the NTC Server on another machine.

With NTC software, you can perform these tasks:

- Add or discover new agents on your network.
- Configure and enable measurements on interfaces or agents.
- Collect data from agents.
- View results of collected data from agents.
- Open a remote session to the Network Analyzer Software application running on an agent for troubleshooting purposes.
- Update software for platforms, agents, and interfaces.

Refer to the *Network Troubleshooting Center Getting Started Guide* for more details about NTC.

Network Analyzer Software

The Network Analyzer Software is installed on the J6802A Distributed Network Analyzer MX at the factory for LAN and WAN protocol analysis. The Network Analyzer Software controls the Network Analyzer data acquisition system. NTC accesses the DNA MX remotely to run the Network Analyzer Software on the DNA MX.

The Network Analyzer Software provides the following capabilities:

- Testing of live networks using the LIM in the DNA MX.
- Analyzing data when the DNA MX is not connected.
- Testing of LAN Ethernet or Token Ring networks with SW Edition.

Refer to the *Network Analyzer Getting Started Guide* for more detailed information.

SNMP/RMON2

SNMP, RMON, and RMON2 (SNMP/RMON2) are remote networking monitoring standards that enable various network monitors and console systems to exchange network monitoring data. SNMP/RMON2 provides a powerful alarm and event mechanism for setting thresholds and notifies you of changes in network behavior through SNMP traps.

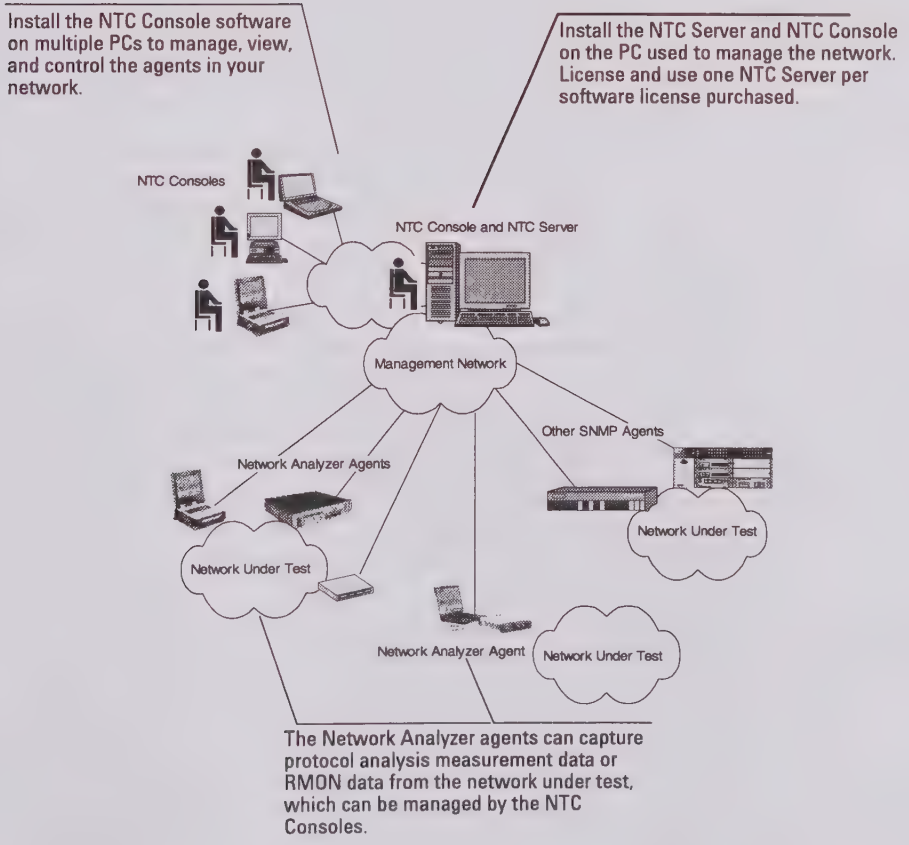
There are two elements to any SNMP/RMON2 solution: an agent, which is commonly referred to as a probe, and a client, which is usually a network management station (NMS). Both the external and internal polling of a device occurs through a remote NMS or a local RMON agent. The RMON agent checks the data collection periodically and reports any errors through SNMP.

As part of the Network Analyzer product family, NTC is used to monitor SNMP/RMON2 data collection on the DNA MX. The RMON agent is installed on the DNA MX and is responsible for the collection of SNMP/RMON2 data.

Only the 10/100/1000 Ethernet LIMs have SNMP/RMON2 capability enabled. When you install an Ethernet LIM in the acquisition slot of the Distributed Network Analyzer MX, the default startup mode is SNMP/RMON2.

Network Deployment Diagram

This diagram shows a sample deployment of a single NTC Server and NTC Console, multiple PCs running the NTC Console, and Network Analyzer Software installed on a J6802A Network Analyzer. Various Distributed Network Analyzers are also illustrated in this diagram.


Install the NTC Console software on multiple PCs to manage, view, and control the agents in your network.
Install the NTC Server and NTC Console on the PC used to manage the network. License and use one NTC Server per software license purchased.
NTC Consoles
NTC Console and NTC Server
Management Network
Other SNMP Agents
Network Analyzer Agents
Network Under Test
Network Under Test
Network Analyzer Agent
Network Under Test
The Network Analyzer agents can capture protocol analysis measurement data or RMON data from the network under test, which can be managed by the NTC Consoles.

Importance of Setting the Time Zone

The operating system time zone for the Network Analyzers is set to Greenwich Mean Time (GMT) at the factory. Communication network hardware is typically coordinated to GMT, which is always the same worldwide. If you change this setting on your Network Analyzers, it will affect the timestamps of captured data.

Using the GMT time zone setting is particularly important in centralized network troubleshooting cases where you are capturing data from a network with geographically dispersed Network Analyzer Agents. In those cases, setting the time zone to GMT for each of the data collection devices allows you to synchronize and easily analyze the correlated data.

If you are using NTC, leaving the time zones set to GMT for all Network Analyzer agents helps to ensure that the data in the NTC Console is synchronized with the NTC Server. In addition, whether a Network Analyzer agent is located in one country or another, the time for each device is based on the same standard.

When two users in two different time zones access a Network Analyzer application through a remote session in NTC, and if one of the users changes the time zone in the Network Analyzer application and then leaves the NA application running, the other user will see the time change throughout the system, including such measurements as decodes. For this reason, Agilent recommends that you use GMT for all users to ensure this is not an issue.

The Distributed Network Analyzer MX

The J6802A Distributed Network Analyzer MX is used as a protocol analysis and SNMP/RMON2 data collection tool in the Network Analyzer product family. The Distributed Network Analyzer MX is an analyzer that performs distributed measurements to relate results at different points in your network.

The Distributed Network Analyzer MX is a transportable and rack-mountable unit that includes one data acquisition system. The standard Network Analyzer Line Interface Modules (LIMs) are supported for LAN and WAN analysis.

The Distributed Network Analyzer MX has a removable hard disk drive and a CD-ROM drive. This platform is designed to be controlled remotely using a remote session application.

The Distributed Network Analyzer MX use models are:

1 **Dispatched Realtime** – You can take the Distributed Network Analyzer MX to a remote location and use a laptop or another PC to control it while monitoring or analyzing a network. If required, you can then configure the Distributed Network Analyzer MX to support the second use model.

2 **Dispatched Remote** - You can take or courier the Distributed Network Analyzer MX to a site, access it from a remotely located laptop or PC by using a telemetry connection (probably dial-up), configure it for measurements, disconnect it while the DNA MX runs independently, and reconnect later to examine the results or download data.

3 **Remote Control Distributed** – This use model is similar to the second one except that you maintain a constant control of the Distributed Network Analyzer MX while it is being used, probably through a LAN connection.

Features

The general features for the Distributed Network Analyzer MX are:

- Provides a single data acquisition system that has a slot for a supported Line Interface Module (LIM). This LIM connects to the network under test to capture data for analysis.
- Supports hot-swappable and interchangeable LIMs.
- Hosts the Network Analyzer Software for full protocol analysis and network testing.
- Collects SNMP/RMON2 data for Agilent's Network Troubleshooting Center application.
- Provides two PCMCIA slots: One for the control link to the PC and one for an NDIS analysis.
- Provides out-of-band control and telemetry access using a PCMCIA combination card. This card contains both 10/100 Ethernet and a 56 K modem.
- Provides AC power connection.
- Uses LEDs that indicate power, health of acquisition system, signal status, and hard disk drive activity.
- Includes GPS interface hardware and connectors.
- Includes Control & Sync Ports (In and Out).
- Includes a 30-Gbyte or greater removable hard disk drive.
- Includes a CD-ROM drive to support system recovery.
- Supports three rackmounting options: front, rear, and middle.

Removable Hard Disk Drive

If you are using the Distributed Network Analyzer MX in secure facilities, you may need to remove and replace the hard disk drive. Agilent Technologies has created the J6751A Alternative Hard Disk Drive to enable you to move the Distributed Network Analyzer MX from site to site without compromising security requirements.

Replace the Distributed Network Analyzer MX disk drive with the Agilent J6751A disk drive only. Other disk drives will not operate with the Distributed Network Analyzer MX. Refer to the J6751A Alternative Hard Disk Drive Product and Installation Note for more detailed information.

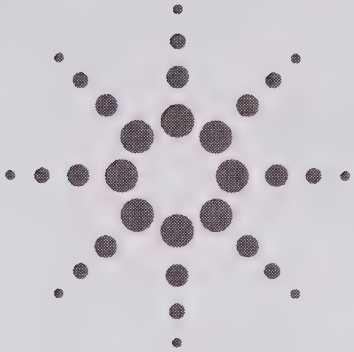
2U Rackmount Hardware

The Distributed Network Analyzer MX comes with mounting hardware that allows you to mount it in a rack. The mounting hardware kit contains:

- Four Phillips screws (crossed-shaped, pointed tips)
- Four Torx screws
- One Phillips screwdriver
- One Torx screwdriver

You can mount this unit with either end facing forward or as a center mount configuration. You can access the DNA MX from the front or back of the chassis.

This photo shows a front configuration using the rackmount ears.



2
Setting Up the Distributed Network Analyzer MX

Requirements for the Distributed Network Analyzer MX 24
Setting Up and Running the Distributed Network Analyzer MX 30
System Recovery 53
Update the Software 54

Requirements for the Distributed Network Analyzer MX

This section describes the PC and software installation requirements.

PC Requirements

The PC can be connected from the support Network Interface Card (NIC) to the telemetry port of a DNA MX. The PC controls the access to the DNA MX through a remote session. The supported computers include a standard PC or PC laptop that meets the requirements described later. You may also use the Agilent J6800A Network Analyzer as a PC.

The PC is used to:

- Configure IP addresses and SNMP/RMON2
- Access the Distributed Network Analyzer MX to run measurements by using the NTC software
- Conduct remote protocol analysis on the DNA MX

Minimum Requirements

The minimum recommended requirements for use with NTC, a PC must have:

- NTC Console and/or NTC Server
- Windows® XP, Windows® 2000, or Windows NT® 4 w/SP5 or higher operating system
- Internet Explorer 5 or higher
- 500 MHz processor or greater (See the *Network Troubleshooting Center Getting Started Guide* for details)
- 256 Mbytes RAM or greater
- 240 Mbytes disk space (NTC Console and Server) 110 Mbytes disk space (NTC Console only)

Agilent Technologies recommends an XVGA (1024 x 768) video adapter and 1024 x 768 screen dimension.

Network Interface Cards (NICs)

The supported NICs for the DNA MX are:

- Installed 10/100 LAN+56 K Cardbus Modem
- J6753A Ethernet 56 K Modem NIC

The J6802A Distributed Network Analyzer MX platform comes installed with the PCMCIA primary NIC, which provides the interface for use with the PC. The J6753A NIC is supported on the second PCMCIA slot on the DNA MX as an optional product, which can provide RMON NDIS analysis.

Use these NIC cards to:

- Control a Distributed Network Analyzer MX remotely
- Collect NDIS measurements using the J6753A NIC card only
- Connect to the IP network to update the Network Analyzer Software

To install a Network Interface Card (NIC) in the Distributed Network Analyzer MX and verify its proper operation, refer to the NIC card manufacturer's instructions.

Modem Connections

The Distributed Network Analyzer MX is capable of operating over a standard Dialup Network connection using the 56 K Modem that resides on the included PCMCIA card. The DNA MX comes configured for modem operation and is ready to accept incoming calls and will setup the connection as a standard network connection.

When you configure a PC to access the DNA MX, you can simply accomplish this task by setting up a standard "Dialup Networking" connection through Microsoft Windows. Refer to the Microsoft Windows Help system about setting up this connection. The default Windows settings are correct for this connection with the exception of the Baud Rate. You must set the Baud Rate to its maximum setting so that the full bandwidth of the PC's modem is available for data transfer.

Configure the connection with the following parameters:

Setting	Value	Comments
Phone Number		Enter Phone Number that is connected to the DNA MX. Remember to include settings for outside lines, call waiting, etc.
Baud Rate	Maximum	
Data Bits	8	Windows Modem Settings Default
Parity	None	Windows Modem Settings Default
Stop Bits	1	Windows Modem Settings Default
Flow Control	Hardware	Windows Modem Settings Default
TCP/IP Settings	DHCP[1]	Windows Dialup Networking Default

NOTE

1. In some versions of Windows, the value for TCP/IP Settings is "Obtain IP and DNS addresses automatically rather than DHCP."

Software Components

You will install the Network Troubleshooting Center (NTC) and Agent Configuration Tool on the PC. NTC provides access to the DNA MX remotely. Additionally, you can use the Agent Configuration Tool to configure the telemetry port and acquisition system on the DNA MX. Certain SNMP/RMON2 interface parameters can be configured as well through the Agent Configuration utility.

See "Software Installation Requirements" on page 27 for more information about NTC and Agent Configuration Tool software components.

Software Installation Requirements

This table describes the installation process from unpacking the hardware to running the software applications. The highlighted sections help you understand what software components are required to operate a DNA MX.

NTC and Agent Configuration Software to Install on a PC When Using a J6802A Distributed Network Analyzer MX		See the NTC Installation Instructions in this Chapter	See Also
Install and Connect Hardware	**1** Unpack the shipment and check the contents. Then set up and configure the hardware.		✔ *Hardware Setup Guide*
Install the NTC Software Components	**2** Prepare to install the NTC software from the Network Analyzer Solutions software CD. Follow these sub-steps to help you decide what actions to take before and after the installation.	✔ See "Step 3: Install the Software" on page 41.	
	2a. You select the NTC option, which contains these software components: • NTC Server • NTC Console • Agent Configuration Tool • Documentation **2b.** You can install and license the NTC Server one time only for each software license that you have purchased. **2c.** Optionally, to install the NTC Console on multiple PCs, select the NTC Console option from the software CD. You are not required to license the NTC Console	**NTC** Required for use with the DNA-MX/ME, includes the NTC Console **NTC Console Only** Also for DNA-MX/ME, requires active connection to the NTC Server	
Configure	**3** Use the Agent Configuration Tool to configure the IP address of the telemetry port of the DNA MX.		✔ *Hardware Setup Guide*
Use	**4** Start the NTC Console and add the DNA MX as an agent.		✔ *NTC Getting Started Guide*
	5 Open a remote session from NTC to the DNA MX, and run the Network Analyzer Software application.		✔ *NA Getting Started Guide*

Before you install NTC

Some logistical items to consider prior to installation:

- For performance reasons, do not install the NTC Server on a computer that is heavily used for another purpose, such as a Web server, a file server, or a domain name server.
- Agilent recommends that you install Agilent NTC on NTFS for better security, system failure recovery, and performance. You can install Agilent NTC on FAT or FAT32 as well. (NTFS, FAT, and FAT32 are operating system file formats. See your Windows documentation for more information.)
- If you have been using a previous version of NTC, you may want to keep the data you have collected before installing the newest version. To save the data, you must copy the current database to a safe location. Please note that if this new version of NTC has database schema changes, your saved database may not work.
- Stop all processes and exit all programs prior to installing NTC. This action includes all anti-virus programs.
- Note the IP address and/or the host name of the computer on which you will install the NTC Server. You will use this IP address (or host name) when you log in to NTC to begin monitoring and troubleshooting. If you intend to install NTC on a "multi-homed host" (that is, a computer with multiple network interface cards and, therefore, multiple IP addresses), be aware that the NTC Server will be associated with only one of these IP addresses. You can control which IP address with which the Server will be associated. See the NTC online Help for NTC Server Manager for more information.

Installing the NTC Console versus NTC Server and Interface Licensing

You can install the NTC Console and Server on a single computer and you can install the NTC Console (without the NTC Server) on several computers. Also, the NTC product you purchased is licensed for data collection on some limited number of physical interfaces. This licensing limit affects how many agents from which you can collect data.

Single CD Installation Process

NTC is installed from a single CD that includes Network Analyzer Software and other utilities. You will choose the NTC option for the PC that will control the DNA MX.

Integrating with Network Management Stations (NMS)

NTC can interact with third-party NMSs, such as HP OpenView. See *Appendix C, Essentials of SNMP, RMON, and RMON2* for about third-party NMSs accessing Agilent devices to collect RMON data..

Starting the NTC Server

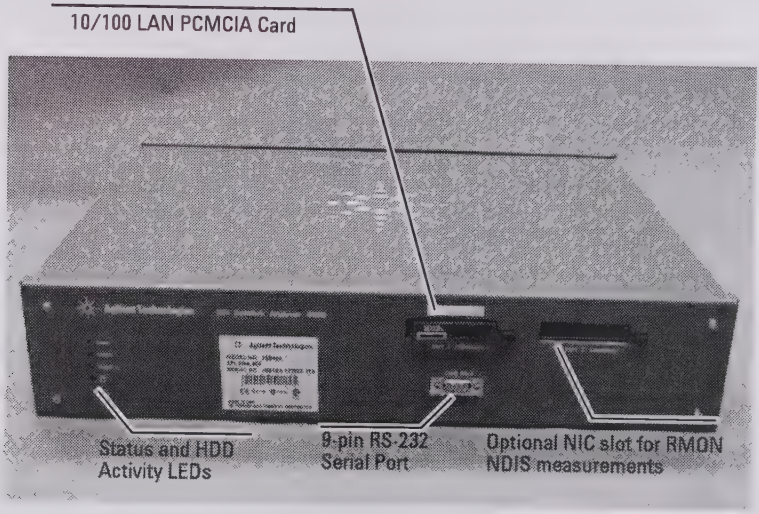
During the NTC Server installation, the system prompts you to start the NTC Server automatically. Agilent recommends that you select the automatic option during the installation. If you do not intend to immediately add agents, start data collection, or start a remote session, you can start the NTC Server later using the Manage NTC Server option in the Windows Start menu.

Uninstalling NTC and Saving the NTC Database

Before you uninstall the NTC Server, save the NTC database. You can save the database by selecting the Manage NTC Server option in the Windows Start menu. If the new version of NTC has database schema changes, your saved database may not work. You can uninstall the Server by selecting the Pre-Uninstall option from the Windows Start menu. Agilent recommends backing up your database on a regular basis.

Setting Up and Running the Distributed Network Analyzer MX

The Distributed Network Analyzer MX provides a pre-installed PCMCIA NIC on the rear of its chassis. This NIC is used to connect to your PC.



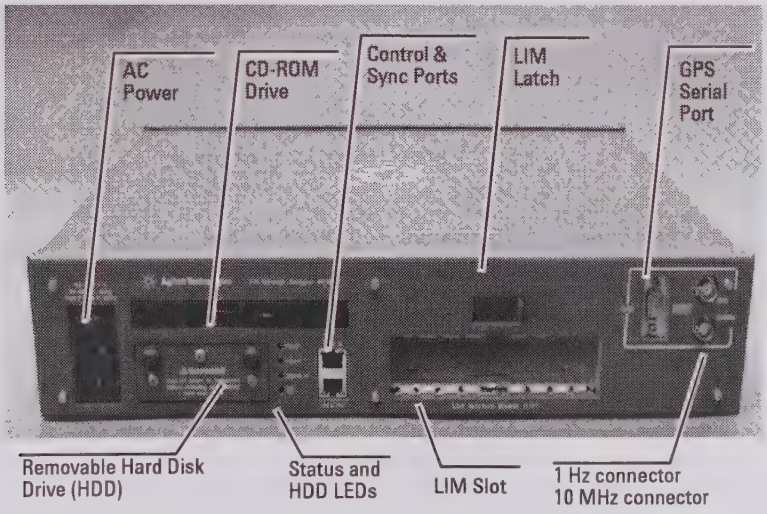
To set up the Distributed Network Analyzer MX, and begin running measurements, use the general steps that are described next:

- "Step1: Make Connections to the DNA MX" on page 31
- "Step 2: Power Up the DNA MX and PC" on page 39
- "Step 3: Install the Software" on page 41
- "Step 4: Configure IP Addresses" on page 44
- "Step 5: Start the Software" on page 49
- "Step 6: Run Measurements to Begin Testing" on page 52

Step1: Make Connections to the DNA MX

When you use the Distributed Network Analyzer MX, you can make these connections:

- Distributed Network Analyzer MX to PC
- Line Interface Module to the network under test
- GPS receiver to the Distributed Network Analyzer MX (optional)
- Control & Sync RJ-45 Connections for time synchronization and control of a DNA MX to a DNA.



NOTE Do not use Control & Sync to connect to your PC. Use Control & Sync to connect to other DNAs.

Connect the Distributed Network Analyzer MX to the PC

To connect the DNA MX to your PC, use the installed PCMCIA card as the control link to the PC through an IP network.

To locate a remote DNA MX on your network, follow these steps:

1. Connect the 10/100 Ethernet cable to a PC that is running the NTC software.
2. Configure the IP address of the DNA MX using the Agent Configuration Tool.
3. Use NTC to control the Distributed Network Analyzer MX at the remote site and add its interface to the network.

Refer to the *Network Troubleshooting Center Getting Started Guide* for more information. See also Step 5: Start the Software 49 for more details.

Install and Connect the Line Interface Module (LIM)

The Distributed Network Analyzer MX contains a single data acquisition system and a slot for a Line Interface Module (LIM). The DNA MX provides all of the connections you need to connect to various types of networks and analyze the protocols used on those networks.

The supported Line Interface Modules (LIMs) for connecting the DNA MX to the network under test include:

Line Interface Module (LIM)	For LAN	For WAN	For ATM
J6811B — STM-1o/OC-3 — with Opt-SC connectors		WAN	ATM
J6812B — STM-1e/EC-3 — with BNC connectors		WAN	ATM
J6813A/B — E3/T3 (DS3) — with BNC connectors		WAN	ATM
J6815A/B — T1/E1 — with Bantam, RJ-45/RJ-48C connectors		WAN	ATM
J6816A/B — E1/T1 — with DB-9, RJ-45/RJ-48C connectors		WAN	ATM
J6817A/B — E1 — with BNC connectors		WAN	ATM
J6818A — ATM25 — with RJ-45 connectors			ATM
J6820A — High-Speed V-Series (37-pin connector)		WAN	
J6830A — 10Base-T, 10/100Base-Tx Ethernet	LAN		
J6831A — 10/100Base-Fx Ethernet (fiber interface)	LAN		
J6832A — 1000Base-X (Gigabit) Ethernet	LAN		

The LIMs are hot-swappable devices. You can remove one LIM and insert another LIM while the power is applied to the Distributed Network Analyzer MX. Collections don't always start/restart when a LIM is reinserted. When a LIM is swapped, its history is lost. For the DNA MX where there is only one interface, collections do not start or restart automatically when a LIM is reinserted.

To restart the collections, you can start the agent in NTC by right clicking on an agent in the Agent view, and choosing "Start". You can also start individual interfaces from the interfaces view.

Refer to the *Line Interface Modules Installation Guide* for details and sample connections.

To install the LIM in the Distributed Network Analyzer MX, follow these steps:

1. Locate the LIM slot and the release latch. If a LIM is installed, slide the latch to release the LIM.
2. Slide the LIM into the slot completely.
3. Press firmly to seat the LIM in the slot.
4. Use the release latch to ensure the LIM is seated properly.

To connect the LIM to the network under test, you can use multiple ways:

- LAN LIMs connect in monitor or node mode - half duplex or full-duplex
- WAN LIMs connect in these Run and Receiver modes - Terminated, Bridged, Monitor Jack, Thru/Drop & Insert.

Refer to the Network Analyzer online Help about how to connect the LIMs to the networks under test.

CAUTION

The data acquisition system reboots each time you install a LIM and each time you shut down the Network Analyzer application also. Do **not** remove power from the Distributed Network Analyzer MX before the data acquisition system has fully initialized. If you shut down the Network Analyzer application and remove power, you could put the DNA MX in a state where you must reprogram the data acquisition system.

The DNA MX has a built-in mechanism to recover from the state described in the Caution above. Agilent recommends that before you close Windows and remove power from the unit, you run the Agent Configuration Tool application to check the status of the LIM to ensure the data acquisition system is detected. See "Agent Configuration Tool" on page 42 for more details.

Connect the GPS Receiver (Optional)

The internal, real-time clock of the Distributed Network Analyzer MX performs time synchronization as the reference clock source. The Global Positioning System (GPS) clock is designed for use as a reference clock source also. The GPS connections are shown on a previous page.

When using Datum GPS units under certain conditions of operation, the Distributed Network Analyzer timestamps can appear to be out of synchronization with the GPS clock. To avoid this situation, ensure that the GPS time is set to Universal Time Coordinated (UTC) before completing the setup.

Multiple GPS receivers are supported. See Time Sync in the Network Analyzer Help for more information.

To connect a GPS receiver to the Distributed Network Analyzer MX, follow these steps:

1. Connect the GPS receiver to the antenna.
2. Connect the GPS receiver to the Distributed Network Analyzer MX's GPS connectors.
3. Apply power to the GPS receiver.
4. Refer to the manufacturer's instructions for more information about your GPS receiver.

Configure the GPS Clock Source (Optional)

CAUTION

Allow the GPS to Synchronize Before Selecting It

Select the GPS clock after you have performed these steps:

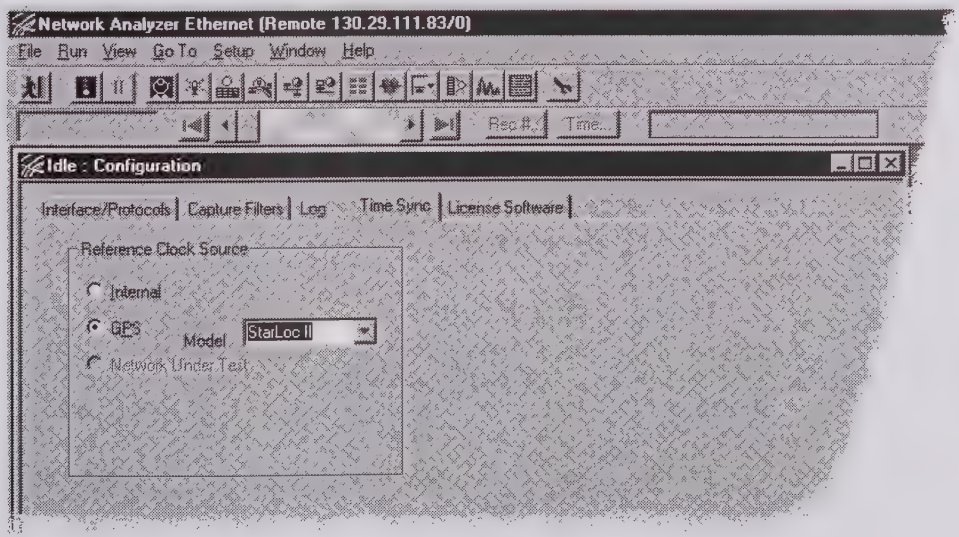
1 Connect the antenna to the GPS receiver.

2 Turn on the GPS.

3 Allow sufficient time for the GPS receiver to synchronize.

Refer to the manufacturer's GPS operating manual for more details.

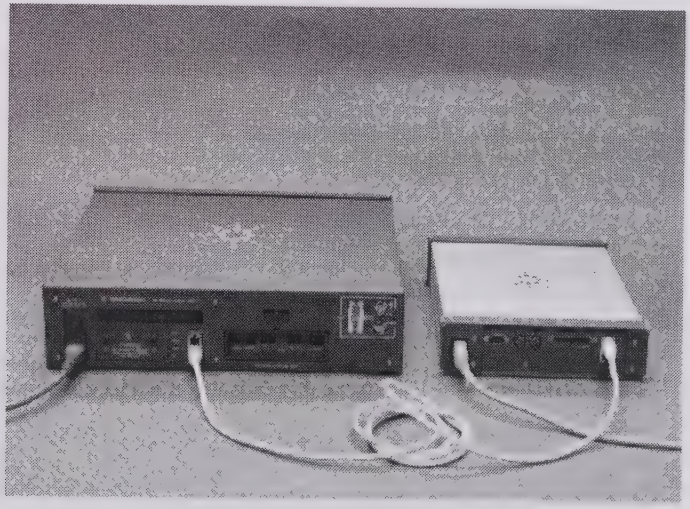
After you access the DNA MX to start the Network Analyzer application through NTC, you can configure the GPS clock source in the Time Sync tab in the Network Analyzer configuration dialog box.



For details about running measurements with the Distributed Network Analyzer MX, see the *Network Analyzer Getting Started Guide*.

Control & Sync RJ-45 Connections

The RJ-45 connector provides the interface between a Distributed Network Analyzer MX and a Distributed Network Analyzer for time synchronization and control purposes. An example of this configuration is shown next.



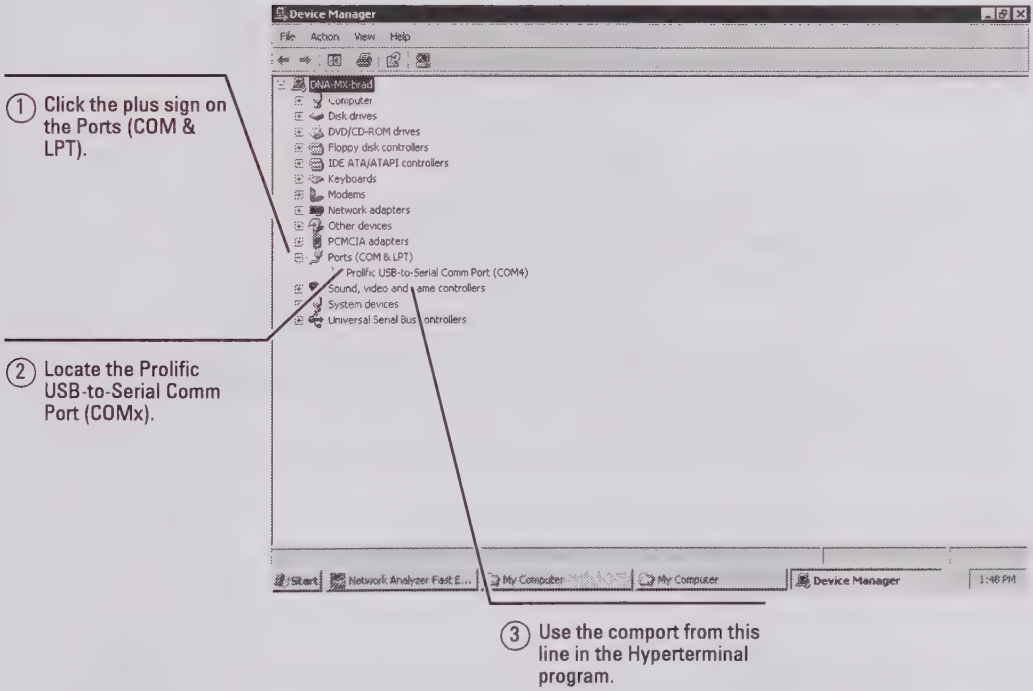
This table lists the pin assignments and signal names for the RJ-45 connector.

Output Port RJ-45 pin	Signal	Input Port RJ-45 pin	Signal
1	RXD+	1	TXD+
2	RXD-	2	TXD-
3	TXD+	3	RXD+
4	CLK_OUT+	4	CLK_IN+
5	CLK_OUT-	5	CLK_IN-
6	TXD-	6	RXD-
7	EVT_OUT+	7	EVT_IN+
8	EVT_OUT-	8	EVT_IN-

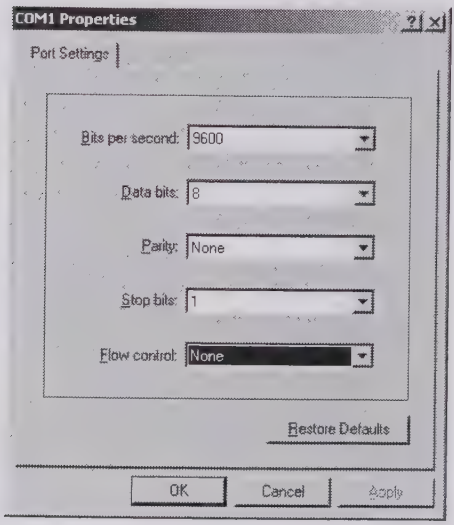
Setting up and Using the Serial Comport

The serial comport is located on the rear of the DNA MX. This connection is a 9-pin RS-232 serial port, which is accessed through the Hyperterminal program. This program is located at C:\Program Files\Windows NT\hypertrm.exe.

In order to determine the correct comport to use in Hyperterminal, go to the Hardware Device Manager from the Control Panel. The Device Manager dialog box appears.



After following the steps shown in the Device Manager dialog box, launch the hypertrm.exe and select this comport from the list box (the comport is the one you obtained above). Click OK. Configure the port to the following settings as shown in this figure and click OK.



Step 2: Power Up the DNA MX and PC

Follow the power-up instructions described here.

1. Make sure the Distributed Network Analyzer MX contains a Line Interface Module.
2. Connect the AC power cable to the DNA MX.
3. Turn on the PC.
4. Wait for the audio announcement (chime) that the Distributed Network Analyzer MX is booted and ready. The process takes five to seven minutes to boot and configure the DNA MX.

   The Distributed Network Analyzer MX determines automatically if the power connection is 100 to 120 volts, or 200 to 240 volts.

If the DNA MX does not power up:

- Ensure that the power cable connections are secure.
- Determine that the AC power is available at the outlet.
- Verify that the fuse is operational.

CAUTION Agilent Technologies ships the Distributed Network Analyzer MX with a three-conductor power cable that grounds it when it is connected to an appropriate power outlet. Do not operate the DNA MX without ground protection.

View the Status LEDs

The status LEDs on the Distributed Network Analyzer MX show the status of activity occurring in this unit. The front and rear sides of the DNA MX come with four indicators that specify the Power, Health, Signal In, and Hard Disk Drive (HDD) activity LED, as described in the following table.

Power	**Description**
Green	Power is applied to the DNA MX.
Health	**Description**
Green	Power is applied to the LIM.
Yellow	The LIM is not functioning properly.
Gray (off)	The DNA MX does not detect a LIM.
Signal In	**Description**
Green	The DNA MX has detected that all configured receivers have a good signal.
Yellow	The DNA MX has detected that a configured receiver has a poor signal, which means the LIM is not functioning properly. The indicator means that bad data or loss of data is occurring. The type of loss depends on the LIM type. See the *Line Interface Modules Installation Guide*.
Gray (off)	The DNA MX does not detect a LIM. A LIM has not been inserted into the LIM slot or the receivers have not been configured.
HDD Activity LED	**Description**
Green	The hard disk drive of the DNA MX is functioning properly when the green light is blinking.

Step 3: Install the Software

When you purchase the Distributed Network Analyzer MX, the Network Analyzer Software is pre-installed on this hardware platform. The DNA MX also comes with the NTC/Network Analyzer Software CD to install NTC and the Agent Configuration Tool on the PC. The DNA MX contains agent software for remote access using a network connection or dial-up modem through the NTC application.

Network Analyzer Software

The Network Analyzer Software is installed on the DNA MX. This software includes:

- Physical Line Analysis – Capture and analyze data from the network under test using LIMs
- SW Edition – Captures and analyzes data from the network under test using a NIC card.
- Offline Analysis – Loads data files stored from a previous run.

Agent Software

An additional software package on the DNA MX includes the agent software that executes at system boot. The agent software acts as the communicator between NTC and the Network Analyzer Software. Additionally, the agent communicates between the NTC and an SNMP/RMON2 application when a 10/100/1000 Ethernet LIM is installed in the acquisition slot of a DNA MX.

Network Troubleshooting Center (NTC)

The NTC software consists of two components: the NTC Console and the NTC Server. You can install both components on the same PC. Alternatively, you can install the NTC Console on one or more machines, and the NTC Server on another machine.

Multiple NTC Consoles can communicate with a single NTC Server. The NTC Server is responsible for data collection, storage, and communication to agents and the NTC Console.

Both the NTC Server and NTC Console must be installed before you remotely access the DNA MX to run the Network Analyzer application.

NOTE

A single license for the NTC Server only allows you to install and use the NTC Server on a single host computer. The NTC Console does not require licensing.

Refer to the *Network Troubleshooting Center Getting Started Guide* for more details.

Agent Configuration Tool

The Agent Configuration Tool allows you to configure IP addresses for the telemetry port and acquisition system. Additionally, this utility allows you to set certain SNMP/RMON2 Ethernet interface parameters. Refer to the Agent Configuration Tool online Help for details about the Agent Properties, LIM/DNA Properties, and RMON Properties windows. See also "Step 4: Configure IP Addresses" on page 44 for more information.

Network Analyzer Solutions

You will install any of the previously mentioned software components on the PC. To install this software, follow these steps:

1. Insert the NTC/Network Analyzer Software CD in the CD-ROM drive.
2. From the Start menu, select Run.
3. Type: D:\install.exe (use the correct letter for the CD-ROM drive) and select OK. The InstallAnywhere dialog box appears and prepares to install the product.
4. Read the Introduction that is displayed on the Agilent Network Analyzer Solutions dialog box.
5. Click Next.
6. Select the "I accept the terms of the License Agreement" option button, and click Next.

7 Choose the Installation Folder in which you want to install the software.

8 Click Next.

9 Select the NTC installation option. This selection also installs NTC Console, Agent Configuration Tool, and documentation. In addition, you may select to install the NTC Console on multiple PCs different from the NTC Server.

10 Follow the instructions on subsequent screens to complete the installation.

11 Reboot your PC after the installation has completed.

To license the NTC Server and Network Analyzer Software, follow the instructions on the License Key Sheet that is shipped with your NTC/Network Analyzer Software CD-ROM. The NTC Console and Agent Configuration Tool do not require licensing. Refer to the *Agilent Network Troubleshooting Center and Network Analyzer Solutions Software Setup Guide* for more information.

To perform agent updates to the DNA MX, see "Update the Software" on page 54 for more information.

Step 4: Configure IP Addresses

This section discusses assigning IP configuration information for the telemetry port and acquisition system of a Distributed Network Analyzer MX.

DHCP versus Static IP Address Configuration

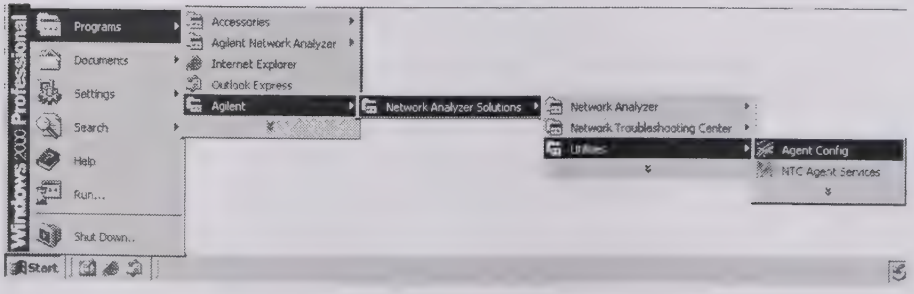
The DNA MX may be configured to use DHCP to acquire its IP address, or may be configured with static IP address. The Network Troubleshooting Center may also be run on hosts using either DHCP or static IP addresses.

Although the DNA MX supports a DHCP configuration, for the most reliable system performance Agilent recommends that static IP addresses be used for all NTC agents, as well as for the NTC Server. Hosts running NTC Consoles can use either DHCP or static IP Address configuration mechanisms.

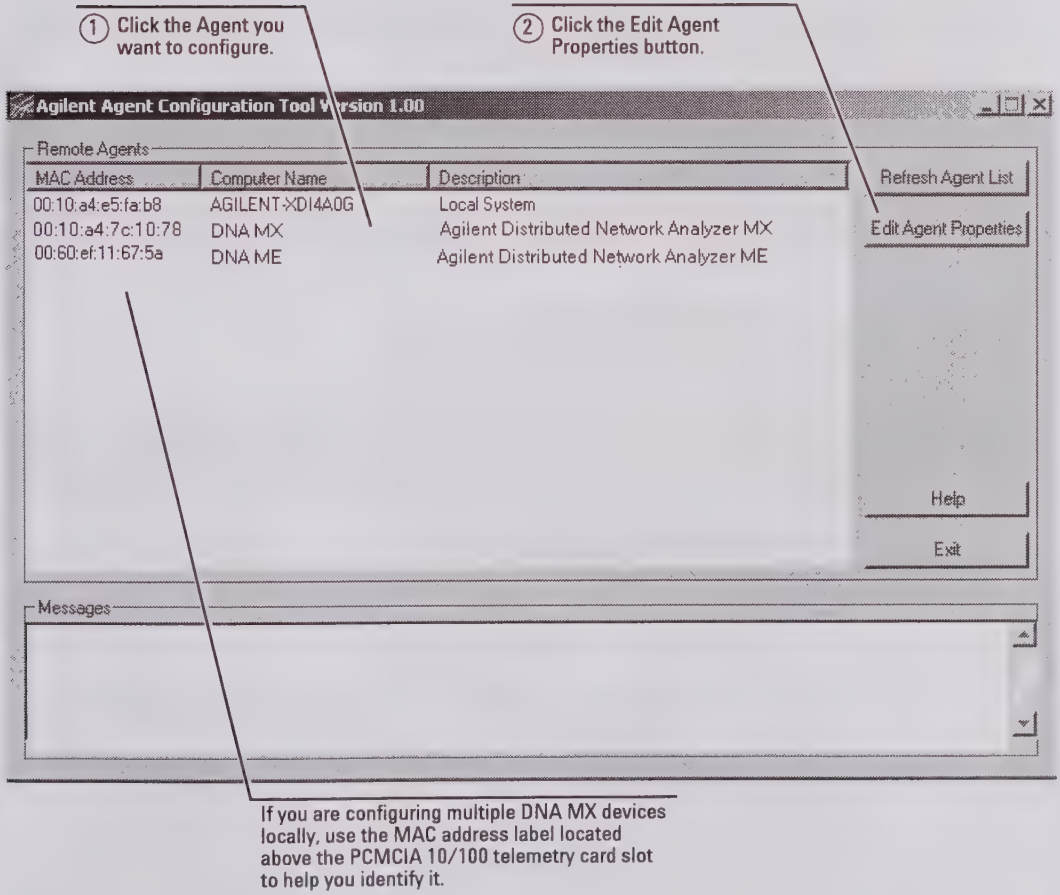
Agent Configuration Tool

The primary use of the Agent Configuration Tool is to set the IP information of the control and telemetry port on the DNA MX. Also, the IP address of the embedded acquisition system is changeable, although it is not required usually. You configure the IP information on the DNA MX if the default IP address is not compatible with your network.

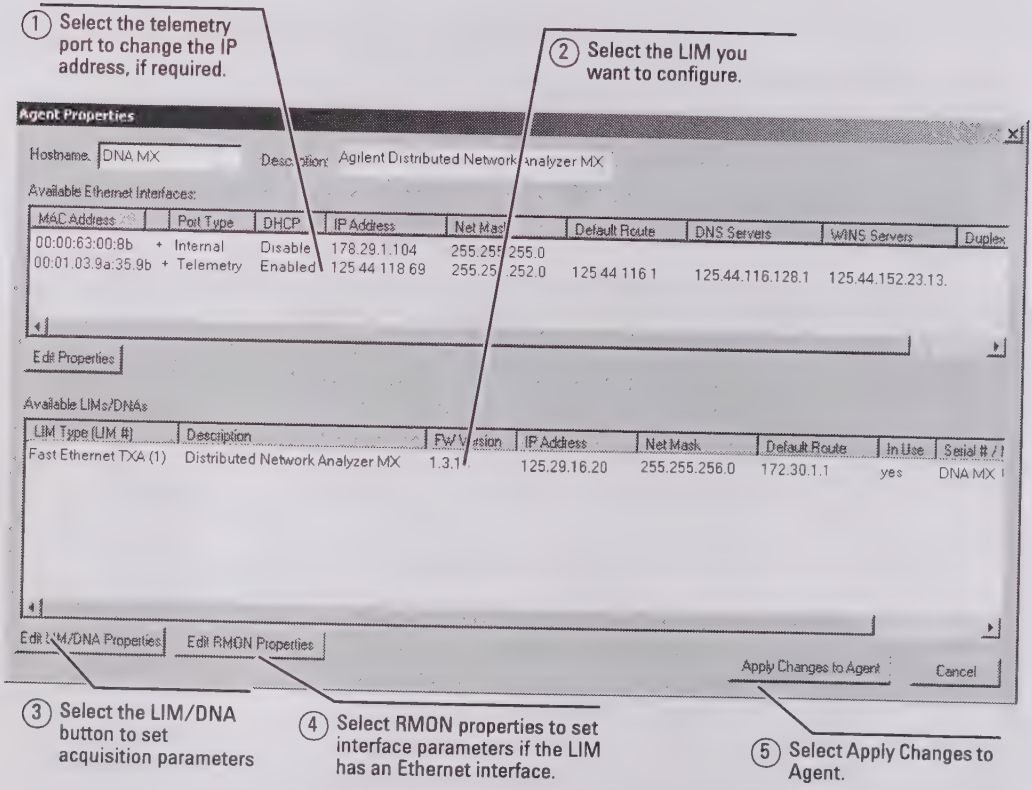
To display the Agent Configuration Tool dialog box, click the Start menu and follow this path:



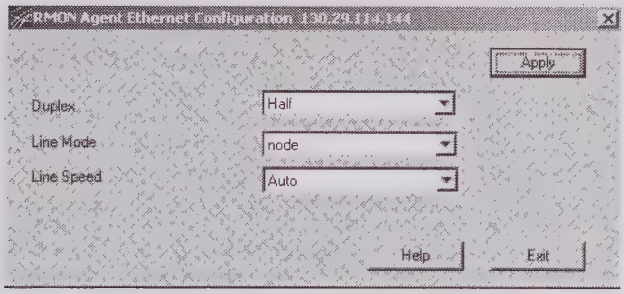
Agent Configuration lets you remotely configure the DNA MX. This data is presented in a series of dialog boxes where you can modify the information for the device. After you select AgentConfig option, the Agent Configuration Tool dialog box appears. Follow the steps to edit the selected agent.



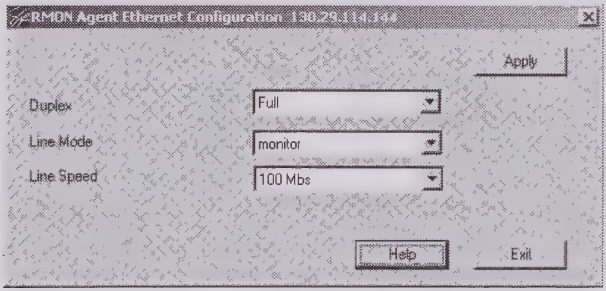
The Agent Properties dialog box is shown next. Follow the steps to configure the LIM or edit RMON properties.


1 Select the telemetry port to change the IP address, if required.
2 Select the LIM you want to configure.
Agent Properties
Hostname: DNA MX
Description: Agilent Distributed Network Analyzer MX
Available Ethernet Interfaces:
MAC Address
Port Type
DHCP
IP Address
Net Mask
Default Route
DNS Servers
WINS Servers
Duplex
00:00:63:00:8b + Internal Disable 178.29.1.104 255.255.255.0
00:01.03.9a:35.9b + Telemetry Enabled 125.44.118.69 255.255.252.0 125.44.116.1 125.44.116.128.1 125.44.152.23.13.
Edit Properties
Available LIMs/DNAs
LIM Type (LIM #)
Description
FW Version
IP Address
Net Mask
Default Route
In Use
Serial # / I
Fast Ethernet TXA (1) Distributed Network Analyzer MX 1.3.1 125.29.16.20 255.255.256.0 172.30.1.1 yes DNA MX
Edit LIM/DNA Properties
Edit RMON Properties
Apply Changes to Agent
Cancel
3 Select the LIM/DNA button to set acquisition parameters
4 Select RMON properties to set interface parameters if the LIM has an Ethernet interface.
5 Select Apply Changes to Agent.

When you edit RMON properties, a dialog box is displayed where you define the duplex, line mode, and line speed. For half-duplex, you choose node and auto or 10 Mbs. This figure shows an example of a half-duplex configuration:



For full-duplex, you choose monitor for the line mode, and 100 Mbs for the line speed. This figure shows an example of a full-duplex configuration:



Refer to the Agent Configuration Tool's online Help for more information.

IP Addressing Scheme for Internal Acquisition System

The Distributed Network Analyzer MX uses a "Private Internet" subnet scheme for the IP address assigned to its internal data acquisition system (LIM). Using the Private Internet IP addressing scheme minimizes the possibility of clashes between a Distributed Network Analyzer MX and other devices on a network. This IP addressing scheme is described next and applies to the Control & Sync port also.

The Network Analyzers use 172.30.1.0 as the subnet by default. This information means that IP addresses from 172.30.1.1 through 172.30.1.254 are valid.

The default IP address is 172.30.1.104 for the DNA MX LIM.

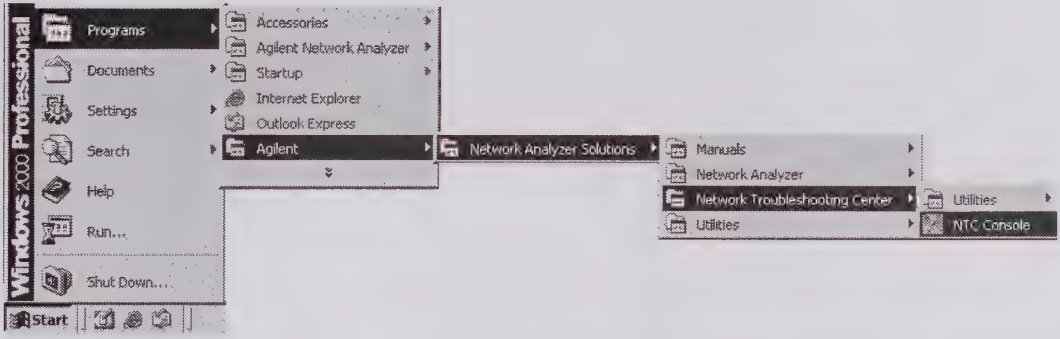
The subnet mask is 255.255.255.0.

The default IP for the internal network interface card is 172.30.1.100.

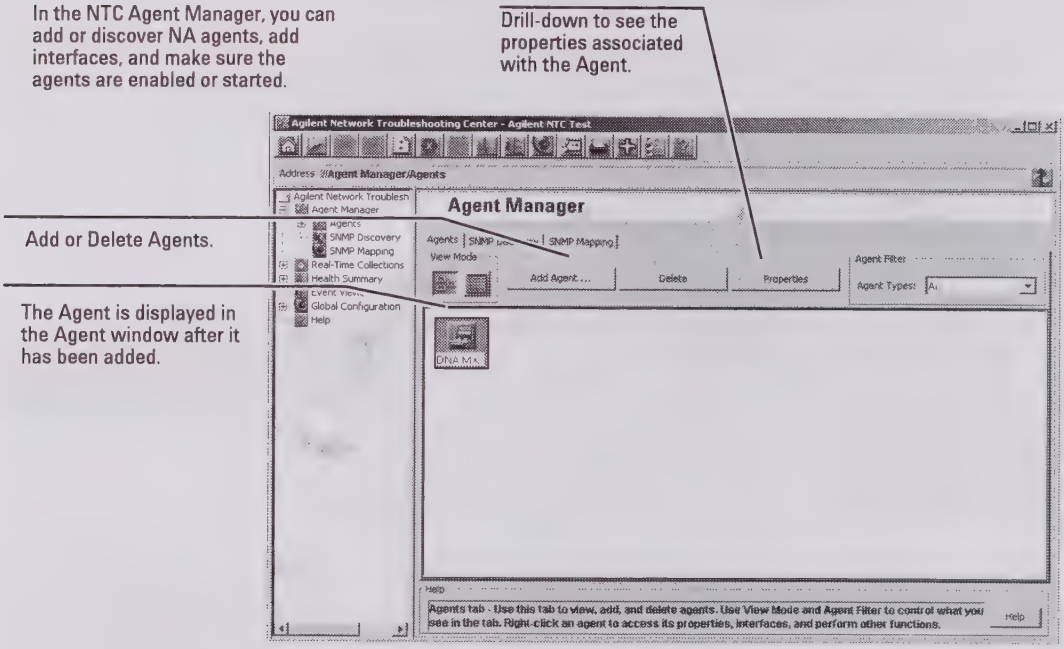
NOTE Unless you attach a DNA to the Control & Sync port, you normally will not need to change either of these IP addresses.

Step 5: Start the Software

NTC is used to control the Network Analyzer and SNMP/RMON2 applications. To view the NTC user interface on the PC, click the Start menu and follow this path:



The NTC window appears and prompts you to enter the hostname or IP address of the NTC Server. If you have installed the NTC Server on the current PC from which you are launching the NTC Console, enter the current PC's hostname or IP address and click OK to display the Agent Manager window.


In the NTC Agent Manager, you can add or discover NA agents, add interfaces, and make sure the agents are enabled or started.
Drill-down to see the properties associated with the Agent.
Add or Delete Agents.
The Agent is displayed in the Agent window after it has been added.
Agilent Network Troubleshooting Center - Agilent NTC Test
Address //Agent Manager/Agents
Agent Manager
Agents
SNMP Discovery
SNMP Mapping
Real-Time Collections
Health Summary
Global Configuration
Help
Agents | SNMP | SNMP Mapping
View Mode
Add Agent...
Delete
Properties
Agent Filter
Agent Types:
DNA MX
Help
Agents tab - Use this tab to view, add, and delete agents. Use View Mode and Agent Filter to control what you see in the tab. Right-click an agent to access its properties, interfaces, and perform other functions.
Help

Additionally, Agent Manager lets you add or discover SNMP/RMON2 agents. Refer to the *Network Troubleshooting Center Getting Started Guide* for more information.

Start the Network Analyzer Software

NTC is used to access the Distributed Network Analyzer MX through a remote session. Using this remote session, NTC can start the Network Analyzer application.

NTC coordinates the data collection methods for Network Analyzer and SNMP/RMON2 measurements. To start the Network Analyzer application on the Distributed Network Analyzer MX, NTC communicates to the DNA MX about switching the application from SNMP/RMON2 mode to the Network Analyzer mode. The DNA MX stops the SNMP/RMON2

data collection on its acquisition system and moves the interface to status down while it is troubleshooting in Network Analyzer mode.

When NTC controls the Network Analyzer application, NTC Mode is displayed in the application's title bar. When you exit from the Network Analyzer application, NTC communicates to the Distributed Network Analyzer MX to stop the Network Analyzer application. The DNA MX stops the Network Analyzer data collection on its acquisition system and moves the interface to status up to start the SNMP/RMON2 data collection again.

Step 6: Run Measurements to Begin Testing

After NTC has accessed the Distributed Network Analyzer MX to start the Network Analyzer application, the DNA MX provides a complete toolset for gathering data during network monitoring, test, and troubleshooting.

If you monitor, test, or analyze...	Tasks You May Perform	Measurement to Use
Network health	**Examine the overall health of the network.**	Expert Analyzer
Decoded data	**Use the protocol decodes to interpret traffic on the network and display the captured data.**	Decode View
Events	**View network events.**	Commentators
Utilization	**View network utilization.**	Protocol Statistics
Nodes	**Display the nodes on the network.**	Node Discovery
Communication	**View the communication between nodes.**	Connection Statistics
Traffic patterns	**Display the traffic patterns between nodes.**	Node Statistics
Physical connections	**Show the status of the physical LIM connections.**	Line Status
Data and trends	**Display cumulative data and trends.**	Protocol Vitals
Ping, Traffic generation...	**Perform active tests on the network.**	Active Tests
Layer 2 activity	**Display LAN, ATM, and WAN layer 2 statistics.**	VLAN Statistics (LAN), VPI.VCI Statistics (ATM), DLCI Statistics (WAN)
Voice quality and MOS	**Assess voice quality on a call-by-call basis and calculate a predictive MOS.**	RTCP Monitor
RTP traffic, VoIP	**Troubleshoot and analyze RTP traffic, and analyze VoIP activity.**	RTP Statistics
Data collection	**Collect data from SNMP-managed devices on a network.**	Switch Advisor

NOTE RTCP Monitor, RTP Statistics, and Switch Advisor are available through separate licenses, which you must enter these licenses on each DNA MX for the first installation or after a software update.

System Recovery

If your system fails to boot or is unavailable due to problems that prevent communication from functioning, some actions can be taken by you before calling Technical Support at Agilent Technologies.

Agilent recommends that you power cycle your machine and wait for the final beeps before accessing it. In many cases, this action will resolve the problem. If your problem persists, you must use the bootable recovery CD that was shipped with your DNA MX.

When you use the recovery CD, it *erases all data* and returns the DNA MX to its factory ship state. Additionally, all software upgrades must be redone after your system has been recovered.

Follow these steps to recover your DNA MX:

1. Insert the bootable recovery CD into your CD-ROM drive.
2. Turn on your machine. The CD will restore all the partitions on your hard drive with the original operating system. This recovery takes about ten minutes.
3. Wait until you hear continuous beeps before removing the CD.
4. Remove the CD and turn off the power.
5. Disconnect all network cables except for the telemetry port.
6. Turn on the power and make sure the telemetry port is connected. You will hear a chime ring on the DNA MX to indicate your system has been restored to its original state.
7. Re-assign the IP address using the Agent Configuration Tool.

In the event your system still fails to boot, contact Technical Support at Agilent Technologies by calling 1-800-452-4844 or send a fax to 303-754-4802.

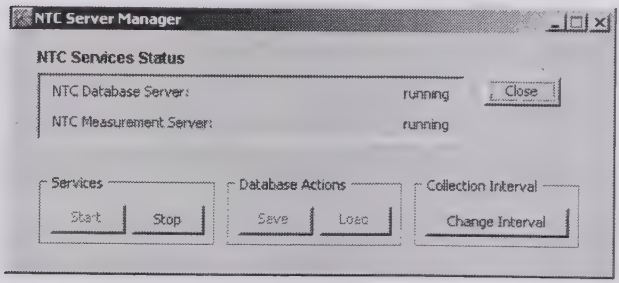
Update the Software

You may be updating the Network Analyzer Solutions software from the Agilent Web site or from a NTC/Network Analyzer Software CD.

Web Updates

The WebUpdate Wizard is used to update your PC (J6800A Network Analyzer or standard PC or laptop) with the NTC Console, NTC Server, and Network Analyzer Software. The WebUpdate Wizard will download any updates and install them automatically. If the NTC Console is installed on another PC than the NTC Server, the WebUpdate Wizard must run on that computer also. The NTC Console and NTC Server must be updated before any agent, such as the DNA MX, is updated. The NTC Server contains the Network Analyzer Software required to download onto the DNA MX.

Make sure the NTC Server is stopped prior to performing an upgrade. You must open the NTC Server Manager dialog box by selecting it from the Start menu. The NTC Server Manager dialog box is shown here:

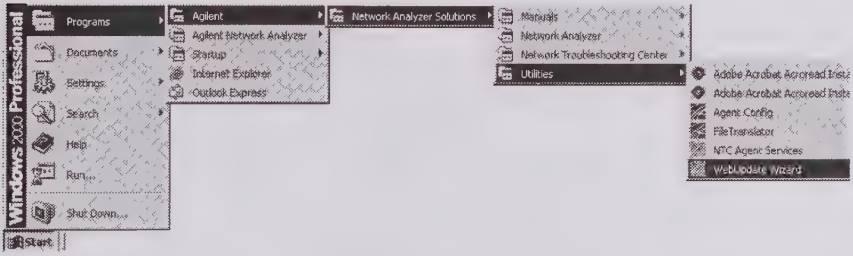


Click the Stop button to terminate the NTC Services prior to installing the NTC software upgrade.

Agilent strongly encourages you to periodically check for updates, including the first time you use the software. The preferred method for updating is by downloading the software from the Agilent Web site. To do so:

1 Connect your PC to the IP network so that you can connect to the Internet.

2 Click the Start menu and follow this menu path:



3 Follow the on-screen directions to complete the update.

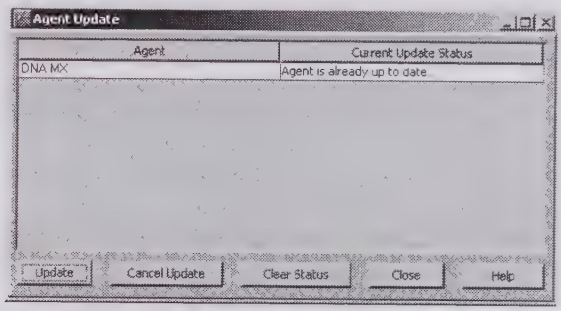
Once you have updated your PC, perform the agent update on the DNA MX by following these steps:

1 Start the NTC Console to display the NTC Agent Manager dialog box.

2 Double-click the DNA MX agent to display the Agent DNA MX Properties window.

3 Click the Software Update button to display the Agent Update dialog box.

An example of the Agent Update dialog box is shown next.



4 Click the Update button to download the Network Analyzer Software to the DNA MX. This process can take up to 30 minutes. Do not interrupt this download because you could destroy the data on the DNA MX.

   The Current Update Status field displays "Agent is already up to date" due to the first release of the Network Analyzer Solutions application. If there was an update, the status would continuously change as the update progresses until it completes the download.

If you do not want to update the software from the Web, contact the Agilent Support Center listed in the front of this manual to obtain an update CD. The CD is used to update the NTC Console/NTC Server. Follow the process mentioned in Step 4 to update the DNA MX.

CD Updates

To install the software on the PC:

1. Insert the Network Analyzer Software CD in the CD-ROM drive.
2. From the Start menu, select Run.
3. Type D:\setup.exe (use the correct letter for the internal CD-ROM drive) and select OK.
4. Follow the instructions on the screen.

Windows NT® 4.0 SP5 (or higher) users and Windows® 2000 users must have Administrator privileges to perform the installation.

A
J6802A Specifications and Regulatory Compliance

J6802A Physical Specifications 60
J6802A Operating Conditions 60
Regulatory Compliances 60

J6802A Physical Specifications

Size	445 x 381 x 89 mm (17.5 x 15 x 3.5 inches)
Weight	4.5 kg (10 lb.)

J6802A Operating Conditions

Temperature	Operating	+5°C to +40°C (+41°F to +104°F)
	Non-operating	-25°C to +60°C (-13°F to +140°F)
Humidity	Operating	20% to 80% rh, non-condensing
	Storage	10% to 90% rh, non-condensing
Altitude	Operating	4,575 meters (15,000 feet)
	Storage	12,200 meters (40,000 feet)
Power Requirements	External	100 to 240V~, 50-60 Hz, 2.5A

Regulatory Compliances

Electromagnetic Compatibility	IEC 61326-1
	European Low-Voltage and EMC Directives (marked)
	AS/NZS 2064.1 (marked)
	ICES/NMB-001 (marked)
Safety	IEC 61010-1
	CSA C22.2 No. 1010.1 (marked)
	UL 3111 (marked)

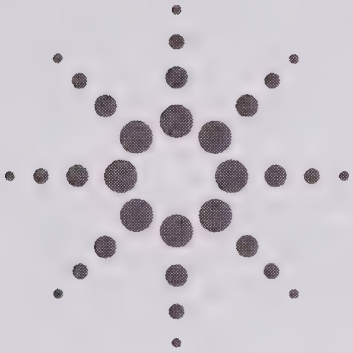
The term "marked" indicates that the product bears the appropriate compliance markings.

B
Distributed Network Analyzer MX Transit Case (Optional)

To transport the Distributed Network Analyzer MX, the J6764A Transit Case is available as an option. The transit case can be wheeled easily from site to site. To position the handle in the upright position, push on the latch located at the back of this case.

Before you move the Distributed Network Analyzer MX, you must disconnect the network connections, telemetry line, and power cord. Remove this device from the equipment rack and take the rackmount ears off. Place the Distributed Network Analyzer MX in the center of the transit case.

This photo shows the J6764A Transit Case with the Distributed Network Analyzer MX inserted inside it.



C
Essentials of SNMP, RMON, and RMON2

Managing Networks Using RMON Data 64
Using NTC to Monitor RMON Data Collection 67
Allocating Memory for the RMON Table 71

Managing Networks Using RMON Data

This appendix provides a basic level of information about RMON data collection on the Network Analyzer products. The Network Troubleshooting Center (NTC) 1.0 release with the Network Analyzer Software 2.0 release support Remote Monitoring (RMON) data collecting in conjunction with SNMPv1.

SNMP Version 1 (SNMPv1) is the current standard version of the SNMP protocol, which is an IETF standard defined in RFC 1157. RMON is an extension to the basic SNMP standard that provides the ability to manage LANs as well as devices attached to those networks.

RMON Version 1 (RMON) is defined in RFC 2819; and its enhanced version, RMON Version 2 (RMON/2), is defined in RFC 2021. Another standard, MIB-II, provides general TCP/IP management information.

These specifications that define SNMP, RMON, and MIB-II can be found at the Internet Engineering Task Force located at www.ietf.org.

Overview of SNMP, MIB-II, and RMON

The SNMP protocol is an application-layer protocol standard for managing TCP/IP based networks. SNMP provides a set of operations that allows devices on your network to be managed remotely. The SNMP protocol allows you to monitor your network constantly. It examines packets coming through your network and notifies you if a potential problem exists.

The SNMP protocol is also considered a network management system that contains management stations and SNMP-capable devices. A network management station is a PC or workstation running a software system that can handle management tasks for a network. Network Management Stations are commonly referred to as NMSs. An NMS polls and receives SNMP data traps from agents in a network.

A poll involves the act of querying an agent for some piece of information. The agent is a piece of software that runs on the network devices you are managing. When the agent notices that something is causing a problem on your network, it can send a trap to the NMS. A trap is the way an agent informs the NMS that an event has occurred. A trap is an asynchronous notification sent from an SNMP agent to a network management station. A trap represents a collection of data defined by a managed object.

SNMP sends and receives information by using the User Datagram Protocol (UDP), which is defined in RFC 768. This means that no end-to-end connection is made between the agent and the NMS when datagrams (packets) are sent back and forth. UDP runs over the IP layer to deliver the packet. UDP allows the NMS and agent to communicate with one another. The IP layer delivers the SNMP packet to its destination, where it is handed off to the physical network.

Each SNMP packet contains a community string for security purposes. The community string in the SNMP statement must be the same as the one in the SNMP agent so communication between the NMS and agent can occur.

A brief overview about Management Information Base objects follows before discussing the SNMP/RMON2 data collection that NTC manages on the Agilent Network Analyzer products.

Management Information Base (MIB)

The Management Information Base (MIB) is a database of managed objects that an agent tracks and is accessed by the NMS. A MIB contains a definition of the managed object and explains its meaning. In other words, the objects in the MIB are used as object identifiers, which means a textual string is used as a descriptor.

The particular MIB standard that is implemented by all SNMP agents is MIB-II. MIB-II provides general TCP/IP management information.

The implementation of RMON data collections for this software release includes RMON MIBs, MIB-II, and Agilent private MIBs. The Agilent private MIBs are not included in this Appendix.

RMON MIB

Remote Monitoring (RMON) is a standard monitoring specification that enables various network monitors and console systems to exchange network-monitoring data.

RMON is a supplement to the MIB-II group. RMON delivers information in nine RMON groups of monitoring elements, each providing a specific set of data to meet common network requirements. RMON provides the NMS with MAC-level statistics.

RMON/2 adds an additional capability by providing network and application-level statistics. RMON/2 delivers information in nine RMON groups of monitoring elements.

See RFC 2021 and RFC2074, *Remote Network Monitoring Management Information Base Version 2*, for more information. See RFC1213, *Management Information Base for Network Management of TCP/IP-based internets: MIB-II*, for more information about these groups.

Using NTC to Monitor RMON Data Collection

SNMP, RMON, and RMON2 (SNMP/RMON2) are remote networking monitoring standards that enable various network monitors and console systems to exchange networking monitoring data. The implementation of SNMP/RMON2 capability for the Network Analyzer devices is available when a 10/100/1000 Ethernet LIM is installed in the following Agilent Network Analyzer products:

- J6800A Network Analyzer
- J6801A Distributed Network Analyzer
- J6802A Distributed Network Analyzer MX

The 10/100 NDIS NIC interfaces on the J6805A Distributed Network Analyzer ME have SNMP/RMON2 capability enabled.

As part of the Network Analyzer Solutions, NTC is used to monitor SNMP/RMON2 data collection on the Network Analyzer products. The RMON agent software that resides on the Network Analyzers is responsible for the collection of SNMP/RMON2 data.

RMON and MIB-II Supported Groups

Agilent supports specific groups in the RMON, RMON/2, and MIB-II protocols. NTC utilizes a subset of this information as listed below:

- Agilent supports four of the nine groups of the RMON MIB: Ethernet Statistics, Alarm, History, and Event.
- Agilent supports all nine groups for the RMON/2 MIB.
- NTC uses the data from four of the RMON/2 MIB groups: Protocol Directory, Network Layer Host, Application Layer Host, and Probe Configuration.
- Agilent supports three of the nine groups in MIB-II: System, Interfaces, and SNMP.

Accessing RMON Data through NTC

NTC coordinates the data collection methods for the SNMP/RMON2 measurements. The default startup mode on the DNA MX and DNA ME is SNMP/RMON2 mode. For the J6800A Network Analyzer and PC agent connected to a J6801A, you must start the agent services manually by using the NTC Agent Services.

The RMON agent gathers statistical information from a subset of these RMONv2 and MIB-II groups and reports the data collection to NTC. NTC monitors the status of a Network Analyzer from the RMON data collection.

The RMON agent notifies NTC through standard traps. A trap is a collection of data that is defined by a particular MIB. A few of the trap formats and contents are described next.

- ColdStart – The RMON agent has performed a cold start and factory defaults have been restored.
- WarmStart – The RMON agent has performed a warm start, all control tables are still persistent, and data tables are cleared.
- LinkDown – An interface has gone down due to the link being disconnected.
- LinkUp – An interface has become active due to a link being restored.

Other proprietary traps exist for interface status. Contact Agilent Technical Support for more information.

The LinkDown and LinkUp traps are particularly important in understanding how NTC monitors the Network Analyzer and SNMP/RMON2 applications that run on the Network Analyzer devices. This scenario, described next, occurs when a user wants to start the Network Analyzer application on a Network Analyzer device while the SNMP/RMON2 application is running.

NTC communicates to the Network Analyzer device about switching the application from SNMP/RMON2 mode to the Network Analyzer mode. The Network Analyzer stops the

SNMP/RMON2 data collection on its acquisition systems and moves the interface to status down, while it is troubleshooting in Network Analyzer mode.

When the user exits from the Network Analyzer application, NTC communicates to the Network Analyzer device to stop the application. The device stops the Network Analyzer data collection and moves the interface to status up to start the SNMP/RMON2 data collection again.

For the Distributed Network Analyzer MX upon exiting the Network Analyzer application, the acquisition system reboots, which means a ColdStart Trap is sent when the interface changes. For the Distributed Network Analyzer ME, a WarmStart Trap is sent to indicate the DNA ME is back in SNMP/RMON2 mode. For the J6800A Network Analyzer and PC agent, you must manually reset the device to SNMP/RMON2 mode.

Accessing RMON Data by Non-NTC Systems

The SNMP protocol utilizes community strings to establish trust between managers and agents. Non-NTC systems, like HP OpenView and others, are allowed to access the SNMP/RMON2 data information gathered on the Agilent Network Analyzers.

These non-NTC systems are considered third-party applications or NMSs that may need to gather statistics from Agilent devices.

The SNMP/RMON2 agent in the J6800A Network Analyzer, J6801A Distributed Network Analyzer, J6802A Distributed Network Analyzer MX, and the J6805A Distributed Network Analyzer ME support the following community strings and access levels as described in the next table.

Community String	Level
Public	1
RMON	2
RMON_admin	3
agilent_admin	4
at_admin	4

Allocating Memory for the RMON Table

The memory allocated for all RMON tables is 64 MBytes of system RAM. Here is a list of the table groups that are configured on the RMON agent probe and their maximum sizes.

Table Name	Maximum Entries
Host Table Size	180000
Maximum Number of RMON MIB TopN Studies	Unlimited
Maximum Entries per TopN Studies	220000
Maximum Traffic Matrix Table Size	250000
Maximum Number of RMON MIB History Studies	Unlimited
Total Number of History Buckets	750000
Network Layer Host Table Size	220000
Network Layer Traffic Matrix Table Size	180000
Application Layer Host Table Size	220000
Application Layer Traffic Matrix Table Size	180000
Maximum Entries Per RMON2 TopN Study	120000
Maximum Entries Per RMON2 Address Map	780000
Maximum Number of Alarms	50000
Maximum Number of Events	120000
Log Table Entries	380000
Maximum Number of Filters	N/A
Maximum Number of Channels	N/A
Maximum Number of Capture Buffers	N/A
Trace Buffer Packet Capacity	N/A
Trace Buffer Octet Capacity	N/A

Maximum Number of Community Names in Com Access Table	Unlimited
Maximum Number of Trap Destinations	Unlimited
Maximum SLIP Connection Entries	N/A
Maximum Single Shot Pings	N/A
Maximum List Pings	N/A

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